

S. Turner

1645

PAGE: 1

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/235,416

DATE: 05/07/1999
TIME: 11:44:45

Input Set: I235416.RAW

This Raw Listing contains the General Information
Section and up to first 5 pages.

PP. 5, 1-4

Does Not Comply
Corrected Diskette Needed

1 <110> APPLICANT: Sakowicz, Roman
2 Goldstein, Lawrence S. B.
3 The Regents of the University of California
4 <120> TITLE OF INVENTION: Identification and Expression of a Novel Kinesin Motor
5 Protein
6 <130> FILE REFERENCE: 18557C-000710US
7 <140> CURRENT APPLICATION NUMBER: US/09/235,416
8 <141> CURRENT FILING DATE: 1999-01-22
9 <150> EARLIER APPLICATION NUMBER: WO PCT/US99/01355
10 <151> EARLIER FILING DATE: 1999-01-22
11 <150> EARLIER APPLICATION NUMBER: US 60/072,361
12 <151> EARLIER FILING DATE: 1998-01-23
13 <160> NUMBER OF SEQ ID NOS: 7
14 <170> SOFTWARE: PatentIn Ver. 2.0
15 <210> SEQ ID NO 1
16 <211> LENGTH: 784
17 <212> TYPE: PRT
18 <213> ORGANISM: Thermomyces lanuginosus
19 <220> FEATURE:
20 <223> OTHER INFORMATION: TL-gamma ATP-dependent plus end-directed
21 microtubule motor protein
22 <220> FEATURE:
23 <221> NAME/KEY: DOMAIN
24 <222> LOCATION: (1)..(357)
25 <223> OTHER INFORMATION: kinesin-like microtubule motor domain
26 <220> FEATURE:
27 <221> NAME/KEY: DOMAIN
28 <222> LOCATION: (358)..(442)
29 <223> OTHER INFORMATION: neck domain links motor domain to stalk domain
30 <220> FEATURE:
31 <221> NAME/KEY: DOMAIN
32 <222> LOCATION: (443)..(601)
33 <223> OTHER INFORMATION: stalk domain, unc-104 family domain
34 <220> FEATURE:
35 <221> NAME/KEY: DOMAIN
36 <222> LOCATION: (602)..(784)
37 <223> OTHER INFORMATION: tail domain
38 <220> FEATURE:
39 <221> NAME/KEY: VARIANT
40 <222> LOCATION: (713)
41 <223> OTHER INFORMATION: polymorphic variant #1 Val -> Ile
42 <220> FEATURE:
43 <221> NAME/KEY: VARIANT
44 <222> LOCATION: (762)

Val -> Ile

"Val" (as shown in
location 713)
can only represent
itself, nothing else.
Use Xaa¹ and
explain in L220-L223
section

PAGE: 2

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/235,416

DATE: 05/07/1999
TIME: 11:44:45

Input Set: I235416.RAW

45 <223> OTHER INFORMATION: polymorphic variant #2 Asp -> Glu *same error*
 46 <220> FEATURE:
 47 <221> NAME/KEY: VARIANT
 48 <222> LOCATION: (774)
 49 <223> OTHER INFORMATION: polymorphic variant #3 Glu -> Asp *same error*
 50 <400> SEQUENCE: 1
 51 Met Ser Gly Gly Gly Asn Ile Lys Val Val Val Arg Val Arg Pro Phe
 52 1 5 10 15
 53 Asn Ala Arg Glu Ile Asp Arg Gly Ala Lys Cys Ile Val Arg Met Glu
 54 20 25 30
 55 Gly Asn Gln Thr Ile Leu Thr Pro Pro Pro Gly Ala Glu Glu Lys Ala
 56 35 40 45
 57 Arg Lys Ser Gly Lys Thr Ile Met Asp Gly Pro Lys Ala Phe Ala Phe
 58 50 55 60
 59 Asp Arg Ser Tyr Trp Ser Phe Asp Lys Asn Ala Pro Asn Tyr Ala Arg
 60 65 70 75 80
 61 Gln Glu Asp Leu Phe Gln Asp Leu Gly Val Pro Leu Leu Asp Asn Ala
 62 85 90 95
 63 Phe Lys Gly Tyr Asn Asn Cys Ile Phe Ala Tyr Gly Gln Thr Gly Ser
 64 100 105 110
 65 Gly Lys Ser Tyr Ser Met Met Gly Tyr Gly Lys Glu His Gly Val Ile
 66 115 120 125
 67 Pro Arg Ile Cys Gln Asp Met Phe Arg Arg Ile Asn Glu Leu Gln Lys
 68 130 135 140
 69 Asp Lys Asn Leu Thr Cys Thr Val Glu Val Ser Tyr Leu Glu Ile Tyr
 70 145 150 155 160
 71 Asn Glu Arg Val Arg Asp Leu Leu Asn Pro Ser Thr Lys Gly Asn Leu
 72 165 170 175
 73 Lys Val Arg Glu His Pro Ser Thr Gly Pro Tyr Val Glu Asp Leu Ala
 74 180 185 190
 75 Lys Leu Val Val Arg Ser Phe Gln Glu Ile Glu Asn Leu Met Asp Glu
 76 195 200 205
 77 Gly Asn Lys Ala Arg Thr Val Ala Ala Thr Asn Met Asn Glu Thr Ser
 78 210 215 220
 79 Ser Arg Ser His Ala Val Phe Thr Leu Thr Leu Thr Gln Lys Trp His
 80 225 230 235 240
 81 Asp Glu Glu Thr Lys Met Asp Thr Glu Lys Val Ala Lys Ile Ser Leu
 82 245 250 255
 83 Val Asp Leu Ala Gly Ser Glu Arg Ala Thr Ser Thr Gly Ala Thr Gly
 84 260 265 270
 85 Ala Arg Leu Lys Glu Gly Ala Glu Ile Asn Arg Ser Leu Ser Thr Leu
 86 275 280 285
 87 Gly Arg Val Ile Ala Ala Leu Ala Asp Met Ser Ser Gly Lys Gln Lys
 88 290 295 300
 89 Lys Asn Gln Leu Val Pro Tyr Arg Asp Ser Val Leu Thr Trp Leu Leu
 90 305 310 315 320
 91 Lys Asp Ser Leu Gly Gly Asn Ser Met Thr Ala Met Ile Ala Ala Ile
 92 325 330 335
 93 Ser Pro Ala Asp Ile Asn Phe Glu Glu Thr Leu Ser Thr Leu Arg Tyr
 94 340 345 350

PAGE: 3

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/235,416

DATE: 05/07/1999

TIME: 11:44:45

Input Set: I235416.RAW

95	Ala	Asp	Ser	Ala	Lys	Arg	Ile	Lys	Asn	His	Ala	Val	Val	Asn	Glu	Asp
96			355					360					365			
97	Pro	Asn	Ala	Arg	Met	Ile	Arg	Glu	Leu	Lys	Glu	Glu	Leu	Ala	Gln	Leu
98			370					375					380			
99	Arg	Ser	Lys	Leu	Gln	Ser	Ser	Gly	Gly	Gly	Gly	Gly	Gly	Ala	Gly	Gly
100			385					390					395			400
101	Ser	Gly	Gly	Pro	Val	Glu	Glu	Ser	Tyr	Pro	Pro	Asp	Thr	Pro	Leu	Glu
102					405						410					415
103	Lys	Gln	Ile	Val	Ser	Ile	Gln	Gln	Pro	Asp	Ala	Thr	Val	Lys	Lys	Met
104					420					425					430	
105	Ser	Lys	Ala	Glu	Ile	Val	Glu	Gln	Leu	Asn	Gln	Ser	Glu	Lys	Leu	Tyr
106					435					440					445	
107	Arg	Asp	Leu	Asn	Gln	Thr	Trp	Glu	Glu	Lys	Leu	Ala	Lys	Thr	Glu	Glu
108					450					455				460		
109	Ile	His	Lys	Glu	Arg	Glu	Ala	Ala	Leu	Glu	Glu	Leu	Gly	Ile	Ser	Ile
110					465					470				475		480
111	Glu	Lys	Gly	Phe	Val	Gly	Pro	Tyr	His	Ser	Lys	Glu	Met	Pro	His	Leu
112					485					490						495
113	Val	Asn	Leu	Ser	Asp	Asp	Pro	Leu	Leu	Ala	Glu	Cys	Leu	Val	Tyr	Asn
114					500					505					510	
115	Ile	Lys	Pro	Gly	Gln	Thr	Arg	Val	Gly	Asn	Val	Asn	Gln	Asp	Thr	Gln
116					515					520				525		
117	Ala	Glu	Ile	Arg	Leu	Asn	Gly	Ser	Lys	Ile	Leu	Lys	Glu	His	Cys	Thr
118					530					535				540		
119	Phe	Glu	Asn	Val	Asp	Asn	Val	Val	Thr	Ile	Val	Pro	Asn	Glu	Lys	Ala
120					545					550				555		560
121	Ala	Val	Met	Val	Asn	Gly	Val	Arg	Ile	Asp	Lys	Pro	Thr	Arg	Leu	Arg
122					565					570						575
123	Ser	Gly	Tyr	Arg	Ile	Ile	Leu	Gly	Asp	Phe	His	Ile	Phe	Arg	Phe	Asn
124					580					585					590	
125	His	Pro	Glu	Glu	Ala	Arg	Ala	Glu	Arg	Gln	Glu	Gln	Ser	Leu	Leu	Arg
126					595					600				605		
127	His	Ser	Val	Thr	Asn	Ser	Gln	Leu	Gly	Ser	Pro	Ala	Pro	Gly	Arg	His
128					610					615				620		
129	Asp	Arg	Thr	Leu	Ser	Lys	Ala	Gly	Ser	Asp	Ala	Asp	Gly	Asp	Ser	Arg
130					625					630				635		640
131	Ser	Asp	Ser	Pro	Leu	Pro	His	Phe	Arg	Gly	Lys	Asp	Ser	Asp	Trp	Phe
132					645					650						655
133	Tyr	Ala	Arg	Arg	Glu	Ala	Ala	Ser	Ala	Ile	Leu	Gly	Leu	Asp	Gln	Lys
134					660					665					670	
135	Ile	Ser	His	Leu	Thr	Asp	Asp	Glu	Leu	Asp	Ala	Leu	Phe	Asp	Asp	Val
136					675					680				685		
137	Gln	Lys	Ala	Arg	Ala	Val	Arg	Arg	Gly	Leu	Val	Glu	Asp	Asn	Glu	Asp
138					690					695				700		
139	Ser	Asp	Ser	Gln	Ser	Ser	Phe	Pro	Val	Arg	Asp	Lys	Tyr	Met	Ser	Asn
140					705					710				715		720
141	Gly	Thr	Ile	Asp	Asn	Phe	Ser	Leu	Asp	Thr	Ala	Ile	Thr	Met	Pro	Gly
142					725					730					735	
143	Thr	Pro	Arg	Ser	Asp	Asp	Asp	Gly	Asp	Ala	Leu	Phe	Phe	Gly	Asp	Lys
144					740					745					750	

PAGE: 4

RAW SEQUENCE LISTING PATENT APPLICATION US/09/235,416

DATE: 05/07/1999

TIME: 11:44:45

same env Input Set: I235416.RAW

145 Lys Ser Lys Gln Asp Ala Ser Asn Val Asp Val Glu Glu Leu Arg Gln
 146 755 760 765
 147 Gln Gln Ala Gln Met Glu Glu Ala Leu Lys Thr Ala Lys Gln Glu Phe
 148 770 775 780
 149 <210> SEQ ID NO 2
 150 <211> LENGTH: 2352 *same env*
 151 <212> TYPE: DNA
 152 <213> ORGANISM: Thermomyces lanuginosus
 153 <220> FEATURE:
 154 <223> OTHER INFORMATION: TL-gamma ATP-dependent plus end-directed
 155 microtubule motor protein
 156 <400> SEQUENCE: 2
 157 atgtcggggcgt gtggaaatat caaggtggtg gtgcgggtac gcccgttcaa cgcccagaaa 60
 158 atcgaccgtg gcgcaaaatg tattgtgcgg atggaaggaa atcaaaccat cctcaccctc 120
 159 cctccgggtg ccgaagagaa ggcgcgtaaa agtggcaaaa ctattatgga tggcccgaag 180
 160 gcatttgctg tcatcggtc gtattggtcc ttgacaaga atgctcccaa ctatgcgaga 240
 161 caggaagacc tattccaaga tctcggagtc ccgcttctgg ataatgcatt caagggttat 300
 162 aacaattgta tcttcgccta cggtcagacc gggtcgggca agtcctattc aatgatgggc 360
 163 tatggcaagg agcatggcgt gatcccgagg atttgccagg acatgttccg gcgtattaat 420
 164 gaactgcaga aggacaagaa cctcacttgc accgtcgaag tttcgtactt ggaaatttac 480
 165 aatgaacgag tgcgagactt gctgaatccg tcgacaaagg ggaatctcaa ggtccgagaa 540
 166 caccgcgcga ccggccccta cgtggaggac ttggcgaagc tggtcgtgcg atcattccaa 600
 167 gaaatcgaaa atctcatgga tgagggcaac aaagccagaa cggttgccgc cacaacatg 660
 168 aacgagacat ccagtcgac ccacgccgtc ttcactttga ccttgacgca aaagtggcat 720
 169 gatgaagaga ccaaaatgga cacagagaag gttgcgaaga tcagtctggt agatttggcg 780
 170 gggtctgagc gagcaacgtc caccggagct actggagcgc gactgaagga ggggtgcagag 840
 171 atcaaccgct cactttcgac cctaggtcgt gtgattgcag cgctagcgga tatgtcgtcg 900
 172 ggaaaacaga agaagaatca gttagtacct taccgagatt cggtactgac gtggcttctg 960
 173 aaggactcct tgggaggcaa ctcgatgacc gccatgattg ccgccatttc gcctgctgat 1020
 174 attaaacttg aagagactct cagtaccctt cgatatgcgg actctgcgaa gcgaatcaag 1080
 175 aaccacgcag tggatcaatga agaccgaac gcgcggatga tccgcgagtt gaaggaggaa 1140
 176 ctgcgcgagc tgaggagcaa actccagagc agtgggtggag gtggaggtgg tgcaggaggt 1200
 177 tctggcgggc cagtggagga atcgtaccgc cccgacacgc cgctcgagaa gcaaactcgtg 1260
 178 tcgattcagc agccggatgc gacagtcaag aaaatgagca aggcagaaat cgtggagcaa 1320
 179 ctgaaccaga gtgagaagct ctatcgggat ctcaatcaga cctgggaaga gaagctggcc 1380
 180 aagaccgagg aaatccacaa ggaacgagaa gcggcgctcg aggagctggg tatcagcatc 1440
 181 gaaaagggct ttgttggtccc ttaccactcc aaagaaatgc cacatctagt caacttgagc 1500
 182 gatgatcctc ttctgggtga gtgtcttgtc tacaacatca agcccgggca gacaagggtt 1560
 183 ggaaacgtca accaagatac acaagcggaa attcgtctga acggttcgaa gatcctgaaa 1620
 184 gaacactgta cgtttgaaaa tgtggacaac gttgtgacca tcgtgccaaa cgagaaggct 1680
 185 gctgtcatgg tgaacggcgt gcgaatcgac aagcctactc gcctccgcag cggtacaggt 1740
 186 atcatcctgg gcgatttcca catttttcga ttcaaccatc cggaagaagc tcgtgcggaa 1800
 187 cggcaagaac aatccttgct tcgccattct gtcaccaaca gtcagttggg ttcgcctgct 1860
 188 ccaggccgtc acgaccggac actgagcaag gcgggttcgg atgcggacgg cgattctcgc 1920
 189 tcagattctc ctttgcgcga ctttcgtgga aaggatagcg actggttcta tgctcgcagg 1980
 190 gaagctgcta gcgcgatcct agggttggat cagaagatct ctcatctgac agatgacgag 2040
 191 ttggatgcat tatttgacga tgttcagaaa gcgcgggcag ttcgtcgtgg gctggctgaa 2100
 192 gacaacgaag atagcgattc gcagagttcg tttccgggtc gtgacaaata catgtccaat 2160
 193 ggaaccattg ataatttctc gctcgatacc gccattacta tgccgggtac ccctcgtagt 2220
 194 gatgacgacg gtgacgcgct gttttttggt gataagaagt cgaaacagga tgcgtctaata 2280

PAGE: 5

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/235,416

DATE: 05/07/1999

TIME: 11:44:45

Input Set: I235416.RAW

```

195      gttgatgttg aggagttgcg tcaacagcag gctcagatgg aagaagccct gaaaacagcg 2340
196      aagcaggaat tc                                     2352
197      <210> SEQ ID NO 3
198      <211> LENGTH: 21
199      <212> TYPE: DNA
200      <213> ORGANISM: Artificial Sequence
201      <220> FEATURE:
202      <223> OTHER INFORMATION: Description of Artificial Sequence:primer
203      <400> SEQUENCE: 3
204      atgtcgggcg gtggaaatat c                               21
205      <210> SEQ ID NO 4
206      <211> LENGTH: 23
207      <212> TYPE: DNA
208      <213> ORGANISM: Artificial Sequence
209      <220> FEATURE:
210      <223> OTHER INFORMATION: Description of Artificial Sequence:primer
211      <400> SEQUENCE: 4
212      gaattcctgc ttcgctgttt tca                               23
213      <210> SEQ ID NO 5
214      <211> LENGTH: 30
215      <212> TYPE: DNA
216      <213> ORGANISM: Artificial Sequence
217      <220> FEATURE:
218      <223> OTHER INFORMATION: Description of Artificial Sequence:degenerate
219      forward primer
220      <220> FEATURE:
221      <221> NAME/KEY: modified_base
222      <222> LOCATION: (25)
223      <223> OTHER INFORMATION: n = a, c, g or t
224      <400> SEQUENCE: 5
W--> 225      ggcgggatcc atytttgcht ayggncarac,                               30
226      <210> SEQ ID NO 6
227      <211> LENGTH: 30
228      <212> TYPE: DNA
229      <213> ORGANISM: Artificial Sequence
230      <220> FEATURE:
231      <223> OTHER INFORMATION: Description of Artificial Sequence:degenerate
232      reverse primer
233      <220> FEATURE:
234      <221> NAME/KEY: modified_base
235      <222> LOCATION: (16)
236      <223> OTHER INFORMATION: n = a, c, g or t
237      <220> FEATURE:
238      <221> NAME/KEY: modified_base
239      <222> LOCATION: (28)
240      <223> OTHER INFORMATION: n = a, c, g or t
W--> 241      <400> SEQUENCE: 6
242      ggcggaattc tcdganccdg cvarrtcnac                               30
243      <210> SEQ ID NO 7
244      <211> LENGTH: 30

```

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY
PATENT APPLICATION US/09/235,416DATE: 05/07/1999
TIME: 11:44:45

Input Set: I235416.RAW

Line	Error/Warning	Original Text
225	W "N" or "Xaa" used: Feature required	gcgcggatcc atytttygcht ayggncarac
242	W "N" or "Xaa" used: Feature required	gcgcgaattc tcdganccdg cvarrtcnac
259	W "N" or "Xaa" used: Feature required	gcgcgaattc tcdctnccdg cvarrtcnac